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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,360	09/11/2003	Fumiyoshi Ikkai	09354.0008-00	1839

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EXAMINER
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BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/659,360

Applicant(s)

IKKAI, FUMIYOSHI

Examiner

Susan W. Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/05</u> | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendments***

The rejections of claims under 35 U.S.C. 112, second paragraph, are withdrawn in response to the amendments o the claims.

***Response to Arguments***

Applicant's arguments filed 09/23/2005 have been fully considered but they are not fully persuasive. The rejections of record are based on the following comments about the term "polymer gel". A gel is considered to be a colloidal solution of a liquid in a solid producing a viscous jelly –like product..

Cywar et al: Applicant argues that Cywar et al do not teach each and every element of the instant claims. Upon reconsideration, it is agreed that Cywar et al disclose polymerizing the monomer in an aqueous solution and then pulverize and dry the gelled polymer product before irradiating the dried gel. Therefore, the rejection of claims 1-10, 21, 23 is withdrawn. Applicant argues that the prior art does not anticipate the instant product by process claims wherein the process disclosed is not irradiation by ultraviolet light. This argument is not persuasive with respect to the product by process claims. Product by process claims are considered to be anticipated by a product obtained by a different prior art process if the product obtained would be expected to have the same structure and/or properties as the instantly claimed product, in the absence of a showing of evidence to the contrary. Therefore, the rejection of claims 11-20, 22, 23 and 29 is maintained.

The rejection of claims over RO 115805 is withdrawn in order to simplify the issues since the disclosure is cumulative of the teaching of Cywar et al.

Applicant argues that Matz et al teach water soluble polymers and not a polymer gel. This argument is not persuasive because Matz et al clearly teach using the disclosed polymers in gel form in column 12, line 38. See also column 10, lines 18-25.

Dobbs et al teach a film-forming composition comprising two different emulsions and a free thaw agent. The rejection of product by process claims over Dobbs et al is withdrawn in order to simplify the issues.

Yada et al '788 and '411: Applicant argues that Yada et al disclose a film rather than a gel. Yada et al '788 clearly disclose an « aqueous polymer gel. Applicant argues that Yada et al '788 does not employ UV radiation in the presence of a persulfate. However, the issue is whether the product obtained by polymerizing the disclosed monomers in the presence of a persulfate results in a polymer gel having the same properties as the instantly claimed polymer gel. The difference in manner of activating the initiator would not be expected to provide a different product, in the absence of a showing to the contrary. Yada et al '411 disclose “sticky polymers” obtained by polymerizing acrylic monomers in solution in the presence of persulfate initiators. The rejection of claims over Yada et al '788 is maintained. The rejection of claims over Yada et al '411 is withdrawn in order to simplify the issues since the disclosure is cumulative of Yada et al '788.

Itoh et al '088 or '886: Applicant argues that Itoh et al do not disclose polymerization initiated by UV radiation in the presence of a persulfate initiator. It is agreed that Itoh et al disclose that polymerization can be initiated by exposure to high energy rays, by using a polymerization initiator, such as a persulfate, or by exposure to high energy rays in the presence of a polymerization initiator. The disclosed products are aqueous poly(meth)acrylamide gels. However, the issue is whether the product obtained by polymerizing the disclosed monomers in the presence of a persulfate results in a polymer gel having the same properties as the instantly claimed polymer gel. The difference in manner of activating the initiator would not be expected to provide a different product, in the absence of a showing to the contrary. The rejection of claims over Itoh et al '088 is maintained and the rejection of claims over Itoh et al '886 is withdrawn in order to simplify the issues. In view of applicant's argument that Itoh et al '886

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teaches additional crosslinking to get “water absorptive composite material”, Itoh et al ‘088 is considered to be closer art to the instantly claimed invention.

Abrahams: Applicant argues that Abrahams teaches polymerizing hydroxyalkylmethacrylate in water either using a persulfate catalyst or omitting a chemical initiator by utilizing radiation, as taught by Abrahams. It is agreed that Abrahams does not specifically teach using radiation in the presence of a persulfate initiator, however, the issues is whether the product obtained by polymerizing the monomers taught by Abrahams in the presence of a persulfate or by utilizing radiation alone is significantly different from the product obtained by the method set forth in the instant claims. The difference in manner of activating the initiator would not be expected to provide a different product, in the absence of a showing to the contrary.

#### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 11-24 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Cywar et al (6,262,141). Cywar et al disclose a method for preparing an acrylic polymer comprising preparing an aqueous solution of an acrylic monomer, a photoinitiator and a persulfate compound, thermally polymerizing the monomer and irradiating with UV light to reduce residual monomer by further polymerization. Gel particles are disclosed. Cywar et al also teach in the description of prior art that it is known to combine redox/azo system with a photopolymerization process (column 1, lines 7-24, and lines 55-61). See column 3, lines 7-25, column 4, lines 46-67, column 5, line 51, to column 6, line 26, column 7, lines 36-40, lines 63-66, column 8, lines 9-14, and the examples. The disclosure of Cywar et al anticipates the instant claims because an aqueous solution of the required monomers is formulated and

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irradiated with UV light. The comprising language in the instantly claimed method encompasses the thermal polymerization step taught by Cywar et al. The polymer gel produced would be expected to be the same, in the absence of evidence to the contrary.

Claims 11-20, 29 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Matz et al (6,691,715). Matz et al teach conventional solution polymerization techniques to polymerize acrylic and/or acrylamide monomers in the presence of sodium persulfate to provide products for cosmetic use or for applications involving fillers (column 11, line 64, to column 12, line 50, and column 6, lines 55-64). Matz et al do not mention UV radiation. The products obtained by the thermal solution polymerization method taught by Matz et al would be expected to be the same as the products obtained by the instantly claimed method because the same monomers are being polymerized in aqueous medium in the presence of a persulfate initiator.

Claims 11-20 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Yada et al (4,690,788). Yada et al disclose a process for preparing polymer gel particles from acrylic and/or acrylamide monomers (column 4, lines 3-64, and examples 1 and 4). Yada et al teach thermally activatable initiators such as persulfates for thermal polymerization and photoinitiators for photopolymerization. Yada et al do not teach photopolymerization in the presence of persulfate initiators. However, the gel polymers produced by the process disclosed by Yada et al would be expected to be the same as the gel polymers produced by the instantly claimed process, in the absence of evidence to the contrary. The reason is that Yada et al teach polymerizing the same kinds of monomers in aqueous solution by either thermal polymerization in the presence of a persulfate initiator or by photopolymerization.

Claims 11-20, 22, 24 and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Itoh et al (5,519,088). Itoh et al disclose aqueous gels comprising a polymer of (meth)acrylamide, particulate metal oxide, and an aqueous medium. Water and miscible solvents are taught in column 6, photoinitiators in column 7 and persulfate initiators in column 8. Itoh et al teach that polymerization can be initiated by exposure to high energy rays, by using a polymerization initiator or by exposure to high energy rays in the presence of a polymerization initiator. Example 18 discloses a persulfate as thermal initiator. Itoh et al do not specifically teach photopolymerization in the presence of persulfate initiators. However, the gel polymers produced by the process disclosed by Itoh et al would be expected to be the same as the gel polymers produced by the instantly claimed process, in the absence of evidence to the contrary. The reason is that Itoh et al teach polymerizing the same kinds of monomers in aqueous solution by either thermal polymerization in the presence of a persulfate or by photopolymerization.

Claims 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Abrahams (3,963,685). Abrahams discloses a hydrophilic water-insoluble, organic solvent soluble polymer prepared by polymerizing a hydroxyalkyl methacrylate in water. Abrahams teaches that a chemical initiator can be obviated by utilizing irradiation (column 2, lines 59-62). Abrahams also teaches that a free radical catalyst, such as potassium persulfate, can be used (column 2, lines 63-68). The polymers produced by the process disclosed by Abrahams would be expected to be the same as the polymers produced by the instantly claimed process, in the absence of evidence to the contrary. The reason is that Abrahams teaches polymerizing the same kinds of monomers in aqueous solution by either polymerization in the presence of a persulfate free radical initiator or by photopolymerization.

With respect to each of the rejections of product claims set forth above: The burden is hereby shifted to applicant to establish by effective argument and/or objective evidence that the prior art

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product(s) or process(es) do not necessarily possess the characteristics of the claimed products or processes. Note In re Spada, 911 F. 2d 705, 709, 15 UPQ2d 1655, 1658 (Fed. Cir. 1990), “When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not”. Note In re Marosi, 710 F 2d 799, 218 USPQ 289 (Fed. Cir. 1983) and In re Thorpe, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). See MPEP 2113. The reference teaches a product that appears to be the same as the product set forth in the product by process claims, although produced by a different process.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 21, 23 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al '088. The disclosure of Itoh et al is discussed above. Itoh et al teach that the two disclosed polymerization methods can be combined when applying high energy rays, such as ultraviolet light, in the presence of a polymerization initiator (column 8, line 64, to column 9, line 8). Thus the disclosure of Itoh et al includes an embodiment wherein the monomers and, optionally, a filler, are polymerized by exposure to UV light in the presence of a photoinitiator and/or a persulfate initiator. The method wherein gel products prepared with filler particles suggest the gel particles of instant claims 26 and 27. It would have been obvious to one skilled in the art at the time of the invention to formulate an aqueous solution of water-soluble monomers, as taught by Itoh et al, and to irradiate the solution with UV light in the presence of combinations of the disclosed initiators, such as a persulfate for radical polymerization and a

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photoinitiator, because Itoh et al teach that the two polymerization initiation methods disclosed can be combined when using ultraviolet light.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB  
12/4/2005



Susan W Berman  
Primary Examiner  
Art Unit 1711